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10/552,000	10/04/2005	Hiroko Yanaga	1752-0173PUS1	6374

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EXAMINER
GOUGH, TIFFANY MAUREEN

ART UNIT	PAPER NUMBER
1657	

NOTIFICATION DATE	DELIVERY MODE
02/17/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/552,000	YANAGA, HIROKO	
	Examiner	Art Unit	
	TIFFANY M. GOUGH	1657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's response filed 11/10/2008 has been received and entered into the case. Claims 1-4 are pending and have been considered on the merits. All arguments and amendments have been considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1 and therefore its dependent claims, 2-4, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the amendment of claim 1 is directed to a method wherein one (1) collects cartilage having perichondrium; (2) treats said cartilage having perichondrium with an enzyme and (3) cultures the treated cartilage having perichondrium of step (2) with that of (3), therefore applicant is claiming culturing cartilage with perichondrium with ***itself*** . Applicant claims combining cultures of step (2) with the culture of step (3), not only is this confusing but it also introduces new matter, which is not described in the specification as originally filed. Applicant's specification teaches obtaining cartilage having perichondrium, treating with type II collagenase and cultured to obtain chondrocytes. The chondrocytes are then further cultured (see pages

8-12). There is no support for Applicants claim of combining two cultures, i.e. the culture of step (2) and (3). In claim 3, applicant claims seeding the cultured chondrocytes, however, in claim 1 there are no cultured chondrocytes claimed. Even further, there is no support for "treating the cartilage…with **an** enzyme…" Applicant only teaches collagenase II and further argues that the perichondrium can be removed by enzyme treatment. Therefore applicant clearly only has support for treating with collagenase II. Therefore, the new amendments to claim 1 and its therefore dependent claims changes the scope of the claims and applicants invention for which no support is provided. **This is a new matter rejection.**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 4 recites the limitation "cultured chondrocytes." There is insufficient antecedent basis for this limitation in the claim.

Claim1 and its dependent claims 2-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant claims a method wherein one (1) collects cartilage having perichondrium; (2) treats said cartilage having preichondrium with an enzyme and (3) cultures the treated cartilage having perichondrium of step (2) with that of (3), therefore applicant is claiming culturing cartilage with perichondrium with ***itself*** . Applicant claims combining cultures of step (2) with the culture of step (3). There appears to only be one sample and no culture.

Further applicant claims "culturing" the "culture" of step (3) with that of step (3). This is confusing. As amended, the format of claim 1 is non-standard and confusing. Each method step should begin with a positively recited gerund.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of each of Megerian et al. (Tissue Engineering, 2000) and Van Osch et al (Plastic and Reconstructive Surgery, 2001) in view of each of Klein-Nulend et al (Tissue Engineering, vol 4, 1998) and Van Osch et al (Tissue Engineering, 2000) supported by Sucheston et al(Ohio J. of Science, 1969).

Applicant claims a method of proliferating human chondrocytes comprising the steps of (1) collecting human cartilage having perichondrium; (2) treating said cartilage having preichondrium with an enzyme and (3) culturing the treated cartilage having perichondrium of step (2) combined with that of (3), wherein no non-human animal feeder cells are present in culture. The cartilage tissue from which the chondrocytes are isolated from is preferably auricular cartilage.

Megerian teaches a method of producing chondrocytes from auricular cartilage comprising collecting auricular cartilage, treating with collagenase and the cells were seeded and cultured until confluence was reached, i.e., a chondrocyte mass was formed (seep.71-72, whole pages). No feeder cells are present.

Van Osch (P&R, 2001) teach isolating human auricular cartilage and culturing the isolated chondrocytes in a monolayer for 3-4 passages (see Materials and Methods section, p. 434). The human cells were also seeded into alginate (see Results section, p. 435). No exogenous feeder cells are present in culture.

Meredian and Van Osch do not teach cartilage with perichondrium.

Klein-Nulend teach culturing human auricular perichondrium containing chondrocytes, wherein no non-human animal feeder cells are present in culture (see Materials and Methods section,p.306 and Results section, p.308-310). Klein-Nulend teach that the perichondrium from ear or rib is disclosed as a convenient source of cells with chondrogenic pontential, i.e. chondrocytes and it is further disclosed that perichondrium cells when transplanted provide a practical source of autologous cells with chondrogenic potential. The teach that the perichondrium from ear or rib is disclosed as a convenient source of cells with chondrogenic pontential, i.e. chondrocytes and it is further disclosed that perichondrium cells when transplanted provide a practical source of autologous cells with chondrogenic potential. Further, Sucheston teach that the perichondrium, specifically human auricular cartilage, does in fact contain chondrocytes (see p.367, Observations section, Adult cartilage).

Van Osch et al (2000) teach growing cartilage in vitro from auricular perichondrium (p.322). The perichondrium is known to possess and differentiate into chondrocytes and also the ability to generate cartilage (see p.325,328). The perichondrium explants were cultured and grown to form a monolayer (p.322-325).

At the time of the claimed invention, it would have been obvious to one of ordinary skill in the art to culture cartilage with perichondrium in a method of producing chondrocytes because as Klein-Nulend teach, the perichondrium from ear or rib is disclosed as a convenient source of cells with chondrogenic pontential, i.e. chondrocytes and it is further disclosed that perichondrium cells when transplanted provide a practical source of autologous cells with chondrogenic potential. Further, Meridian and Van Osch teach that cartilage itself and the perichondrium possesses the ability to differentiate into chondrocytes. Thus, it would have been obvious to combine cell/tissue types which are known in the art to be resources of/for chondrocytes.

Moreover, at the time of the claimed invention, one of ordinary skill in the art would have been motivated to culture cartilage with perichondrium with a reasonable expectation for successfully producing chondrocytes because as Klein-Nulend teach, the perichondrium from ear or rib is disclosed as a convenient source of cells with chondrogenic pontential, i.e. chondrocytes and it is further disclosed that perichondrium cells when transplanted provide a practical source of autologous cells with chondrogenic potential. Further, Meredian and Van Osch teach that the the cartilage and perichondrium possesses the ability to differentiate into chondrocytes. Thus, it

would have been motivated to combine cell/tissue types which are known in the art to be resources of/for chondrocytes.

Thus, a holding of obviousness is proper.

Response to Arguments

Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection. However, applicant's arguments will be addressed in part. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to arguments regarding the Klein-Nulend reference, applicant argues that the reference teaches differentiation of cartilage from perichondrium tissue. Applicant argues that the reference does not teach perichondrium cultured with chondrocytes. Applicant is reminded that the claims do not claim culturing with chondrocytes. Therefore, the arguments are not commensurate in scope with the claim limitations.

In response to the Van Osch references applicant argues that the reference teaches rabbit perichondrum tissue. Van Osch, 2001 teaches both rabbit and human cartilage. The references teach cartilage and perichondrium as a source for proliferating chondrocytes. Applicant argues that the reference does not teach culturing chondrocytes with perichondrocytes as claimed (p.8 of response). Applicant **does not claim** culturing chondrocytes with perichondrocytes. Therefore, the arguments are not commensurate in scope with the claim limitations.

In response to applicants "Advantages of the present invention" sections (A)-(E), applicant **does not claim** any of these advantages. Therefore, the arguments/advantages are not commensurate in scope with the claim limitations. In response to sections (F-G), there is clear motivation from the art which teaches that human perichondrium and cartilage is an excellent source of chondrocytes when grown in culture. Therefore, it would be obvious to one of skill in the art to culture cartilage and perichondrium together to proliferate chondrocytes as each are known source of these cells.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIFFANY M. GOUGH whose telephone number is (571)272-0697. The examiner can normally be reached on M-F 8-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ralph Gitomer/
Primary Examiner, Art Unit 1657

/Tiffany M Gough/
Examiner, Art Unit 1657